

REMARKS

Thorough examination and careful review of the application by the Examiner is noted and appreciated.

The indication by the Examiner that claims 5, 10, 15 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten into independent form to include all of the limitations of the base claim and any intervening claims, is further noted and appreciated.

Claims 1-20 are pending in the application.

Independent claims 1 and 11 have been amended to further incorporate the limitations contained in dependent claims 5 and 15, respectively. The Applicants respectfully submit that independent claims 1 and 11 are now equivalent to dependent claims 5 and 15 being rewritten into independent form to include all of the limitations of the base claims. It is therefore respectfully submitted that independent claims 1 and 11 are now allowable, and likewise, their dependent claims 2-3 and 12-13. A reconsideration for allowance of these claims is respectfully requested of the Examiner.

Claim Rejections Under 35 U.S.C. §103

Claims 1-4, 6-9, 11-14 and 16-19 are rejected under 35 U.S.C. §103(a) as being unpatentable over Penunuri '036 in view of Oldfield '821. It is contended that while Penunuri does not disclose the spirally patterned conductor layer being spirally topographically tapered in a vortex shape, such is disclosed by Oldfield in forming a microwave device comprising a spirally patterned conductor layer 2 being spirally topographically tapered in a vortex shape (col. 3, lines 12-65 and Fig. 3A).

The rejection of claims 1-4, 6-8, 11-13 and 16-18 under 35 USC §103(a) based on Penunuri and Oldfield is respectfully traversed.

Claims 4, 9, 15 and 19 have been cancelled and withdrawn from further consideration by the Examiner.

The Applicants further submit that claims 1-3 and 11-13 are now believed to be patentable as they have been amended according to the Examiner's suggestions. As a result, only the rejection of claims 6-8 and 16-18 is traversed.

While the Applicants respectfully agree with the Examiner that Penunuri does not disclose the spirally patterned conductor layer being spirally topographically tapered in a vortex shape, the Applicants must respectfully point out such is neither taught or disclosed by Oldfield.

Oldfield discloses a microwave inductor with windings around tapered poly-iron core in which, as shown in Figs. 3A, 3B and 5A, 5B and at col. 3, lines 13+:

"The present invention, therefore, utilizes a coil 2 having windings with diameters tapered from a first diameter ϕ_1 at one end of the coil to a second diameter ϕ_2 at a second end of the coil, as shown in Figs. 3A and 3B. ... Diameters tapered from ϕ_1 equal 0.020 inches to ϕ_2 equal 0.090 inches ..."

Furthermore, at col. 4, lines 14+:

"Fig. 6 shows insertion loss vs. frequency for an inductor coil having windings with diameters tapered from ϕ_1 equal 0.015 inches to ϕ_2 equals 0.065 inches ..."

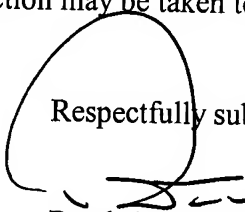
Oldfield teachings are therefore reverse of that taught by the present invention, i.e. Oldfield does not teach a vortex. The Oldfield teaching inductor coil has a small diameter at the top (ϕ_1) each tapering up to a larger diameter at the bottom (ϕ_2). The tapered inductor coil of Oldfield does not have a vortex shape.

The term vortex as defined by the Webster's Dictionary "a mass of fluid and especially of a liquid with a whirling or circular motion that tends to form a cavity or vacuum in the center of the circle and to draw towards this cavity or vacuum bodies subject to its action". A vortex therefore does not necessarily have a larger diameter at the top i.e. or at the open end, and a smaller diameter at the bottom i.e. or at the closing end. The Oldfield inductor coil therefore has an inversed vortex shape. The Applicants respectfully submit that the Penunuri reference and the Oldfield reference, even when combined, does not teach the present invention as clearly recited in claims 6-8 and 16-18.

The rejection of claims 6-8 and 16-18 under 35 USC §103(a) based on Penunuri and Oldfield is respectfully traversed. A reconsideration for allowance of these claims is respectfully requested of the Examiner.

Based on the foregoing, the Applicants respectfully submits that all of the pending claims, i.e. claims 1-3, 6-8, 10-13 and 16-18 and 20, are now in condition for allowance. Such favorable action by the Examiner at an early date is respectfully solicited. In the event that the present invention is not in a condition for allowance for any other reasons, the Examiner is respectfully invited to call the applicant's representative at his Bloomfield Hills, Michigan office at (248) 540-4040 such that necessary action may be taken to place the application in a condition for allowance.

Respectfully submitted,


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